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EXAMINER
NGO, CHUONG D

ART UNIT	PAPER NUMBER
2193	

MAIL DATE	DELIVERY MODE
01/12/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *11 November 2009*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,2,5-19 and 21-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *1,2 and 5-14* is/are allowed.

6) ☒ Claim(s) *15-19 and 21-27* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claim 1 is objected to because of the following informalities: "□", line 5, should be

changed to -- ϵ --. Appropriate correction is required.

2.   Claims 15-19 and 21-27 are rejected under 35 U.S.C. 102(e) as being clearly anticipated

by Smeets (6,813,625).

        As per claims 15,16,18,19,21,26 and 27, Smeets discloses in figure 2 a generation of a

chaos-based pseudo-random sequence in an encryption application including defining a chaotic

map (201) for generating a pseudo-random sequence of integer numbers in a certain interval,

choosing a seed (the initial states) for the pseudo-random sequence of integer numbers, and

generating numbers of the pseudo-random sequence (Z), defining a function F(203) on the

interval whose inverse has a plurality of branches and calculating numbers of a chaos-based

pseudo-random sequence by applying the function to corresponding integer numbers of the of

the pseudo-random sequence, storing the first chaos-based random value in a circuit and

encrypting data using the stored first chaos-based random value as claimed as claimed (see col.9,

lines 39-60).

        As per claims 17,24 and 25, Smeets in col. 6, lines 1-5, the function F being also

exclusive-or function (mod2 sum) as that of the present invention and thus the inverse of the

function has a number of branches equal to the largest bound of the interval.

        As per claims 22 and 23 Smeets discloses col.5, lines 45-67 the chaotic map a truncated

linear congruential generator.

3.   Claims 15-19 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Butler (6,678,707).

As per claims 15,16,18,19,21,26 and 27, Butler discloses in figure 8 a generation of a

chaos-based random sequence in an encryption application, including generating (402-412) a

first random value with a chaotic map, generating (800) a fist chaos-based random value as a

function of the first random value within a finite interval values, the function (exclusive-or

function) having an inverse with a plurality of branches, storing the first chaos-based random

value in a circuit and encrypting data using the stored first chaos-based random value as claimed

(see figure 10, and col. 10, lines 35-60). It is noted that Butler does not discloses random

sequence and the random value are pseudo. However, Butler does teaches in col. 6, line 33-37, a

pseudo random generation by keeping the external inputs IN[X] to the MISR constant.

Therefore, to a person of ordinary skill in the art it would have been an obvious modification

keep the external inputs IN[X] to the MISR constant as a seed for generating pseudo-random

sequence and value as claimed.

As per claims 17, 24 and 25, Butler disclose in col. 8, lines 18-20, the function being also

exclusive-or function as that of the present invention and thus the inverse of the function has a

number of branches equal to the largest bound of the interval.

As per claims 22 and 23, Butler discloses in figure 3 the chaotic map a truncated linear

congruential generator.

4.   Claims 1,2 and 5-14 are allowed.

5. Applicant's arguments filed on 08/12/2008 have been fully considered but they are not

persuasive with respect to the rejections based on Smeets and Butler. It is respectfully submitted

that a random sequence generating function is clearly a chaotic mapping function. Since Smeets

and Butler both disclose the random numbers generation based random sequence generating

functions, they clearly teach chaos-based pseudo-random value generation as claimed.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

 A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis, Jr. A. Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong D Ngo/
Primary Examiner, Art Unit 2193

01/07/2010